

Commodity Highlight: Iceberg Lettuce

Iceberg lettuce is the most popular type of crisphead lettuce produced in the United States. Also popularly known as head lettuce (the name used most often in this article), crisphead is one of four main types of lettuce produced in the United States. The others are romaine (also known as cos), butterhead lettuce (e.g., Boston and Bibb), and looseleaf lettuce (e.g., green leaf, red leaf, and oak leaf). Like artichokes and endive, crisphead lettuce (*Lactuca sativa*) is one of the few members of the sunflower (*Compositae*) family cultivated for use as food. Originating in the Mediterranean region, iceberg lettuce is a cool-season crop that grows well in the environment of the desert southwest during the winter and along the central coast of California during most other times of the year.

Lettuce, one of the oldest known vegetables, is thought to have been brought to North America by early English settlers. Since that time, the United States has become the second leading producer of lettuce (all types) in the world, with 22 percent of total output. 1/ According to the Food and Agriculture Organization of the United Nations, the United States was the top lettuce producer from 1962 to 1994, when explosive growth in China's reforming agriculture sector vaulted it to the top.

1/ FAOStat database (6/2006), Food and Agriculture Organization, United Nations.

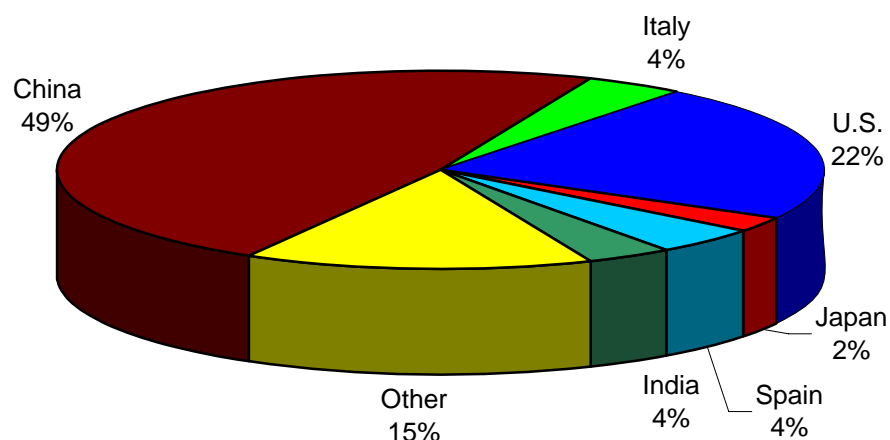
Production Is Concentrated

In 2002, the Census of Agriculture disclosed head lettuce separately from other lettuce for the first time. According to the census, 830 farms harvested head (largely iceberg) lettuce from nearly 189,000 acres. Although these farms were spread over 42 States, only California (130,389 acres), Arizona (50,856 acres), and Colorado (2,715 acres) reported harvesting more than 1,000 acres of head lettuce.

Nearly all (98 percent) of the lettuce consumed in the United States is produced domestically. The vast majority of reported domestic head lettuce production takes place in two States, California and Arizona, which account for about 98 percent of the commercial domestic output. Over the past decade, U.S. head lettuce production has remained relatively stable, with a 1-percent decline noted between 1993-95 and 2003-05. However, while the popularity of leaf and romaine lettuce

Figure 11

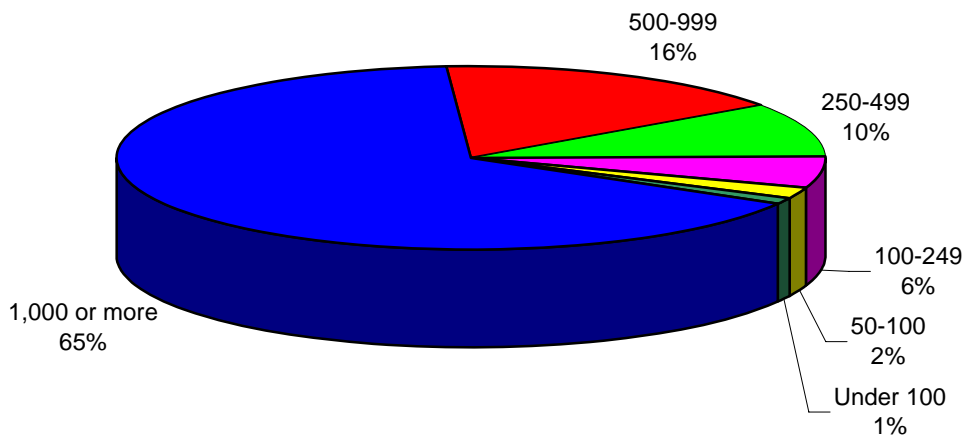
World lettuce production, average 2003-05



Source: FAOStat (5/2006), Food and Agriculture Organization, United Nations.

Figure 12

U.S. head lettuce: Distribution of harvested area by acre class, 2002 1/



1/ Units are acres, e.g., "Under 100", indicates farms with fewer than 100 acres of head lettuce.
Source: 2002 Census of Agriculture (table 35), NASS, USDA.

has surged, head lettuce's share of U.S. lettuce production has declined from 80 percent in 1993-95 to 64 percent in 2003-05.

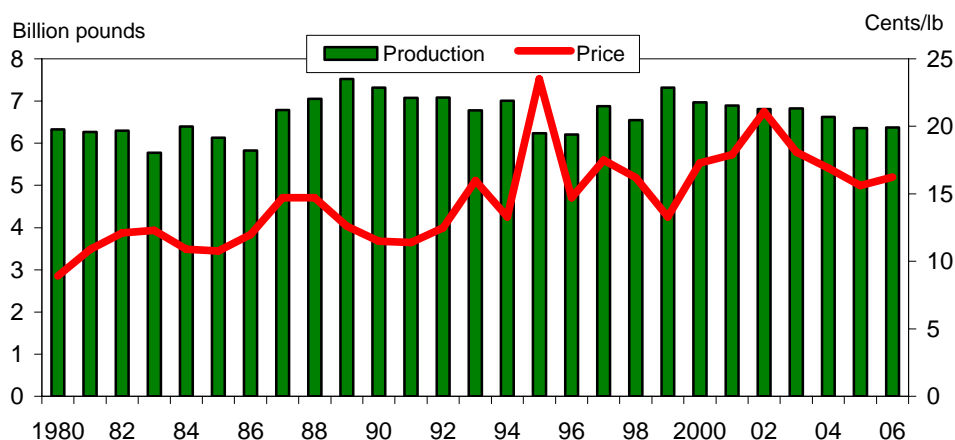
The majority of head lettuce is sourced from several major producing areas in California and Arizona, depending on the time of the year. For head lettuce, the season begins in the Salinas Valley of California and runs from April through October. Harvest then moves inland to Huron in California's San Joaquin Valley for about a month as shippers await the start of the winter desert season in Yuma, Arizona and the Imperial Valley of California. Production remains in the desert area from November through March before again moving up to Huron for several weeks prior to beginning the annual cycle in the Salinas Valley. In order to offer buyers "one-stop shopping", most shippers of iceberg lettuce market a well-diversified mix of vegetables, including such crops as broccoli, cauliflower, celery, green onions, radishes, and spinach.

During 2003-05, the farm value of the U.S. head lettuce crop averaged \$1.12 billion, down 3 percent from 1993-95. Among vegetables, the farm value of the head lettuce crop is exceeded only by potatoes and tomatoes. California, by virtue of its year-round growing season, accounts for three-fourths of the farm value of head lettuce.

The 2003-05 farm price for head lettuce was slightly lower than a decade earlier but was up 49 percent from the 1983-85 average. After adjusting for inflation, during 2003-05 the farm price for head lettuce averaged 8 percent below that of 20 years earlier. However, this small constant dollar decline was more than offset by a 28-percent increase in per-acre productivity over the past two decades.

Over the past decade, monthly f.o.b. head lettuce prices have shown increased variability. Obviously, weather plays the primary role in this phenomenon, but weather has always been a factor in fresh vegetable price variation. One explanation may be an increase in the share of market volume moving under direct contract between grower/shippers and end users (e.g., processors and retailers). This reduces the supply available within the bulk commodity spot market, which, in

Figure 13

U.S. head lettuce: Production and average grower price 1/

1/ Prices not adjusted for inflation.

Source: Prepared by ERS based on data from *Vegetables Summary*, NASS, USDA.

turn, tends to increase the variability of lettuce prices due to unforeseen short-term supply impacts (such as planting disruptions caused by excess rain).

Consumer demand for convenience and product diversity together with technological advances in such areas as packaging films, have spurred the U.S. lettuce industry to reinvent itself over the past 15 years. As a result, most major shippers of head lettuce sell a wide variety of products through various market channels. In addition to the familiar cello-wrapped heads of iceberg lettuce, major shippers now offer a variety of fresh-cut or lightly processed products. These fresh-processed products are still considered fresh-market produce since they are not heated when processed (which typically defines a processed food).

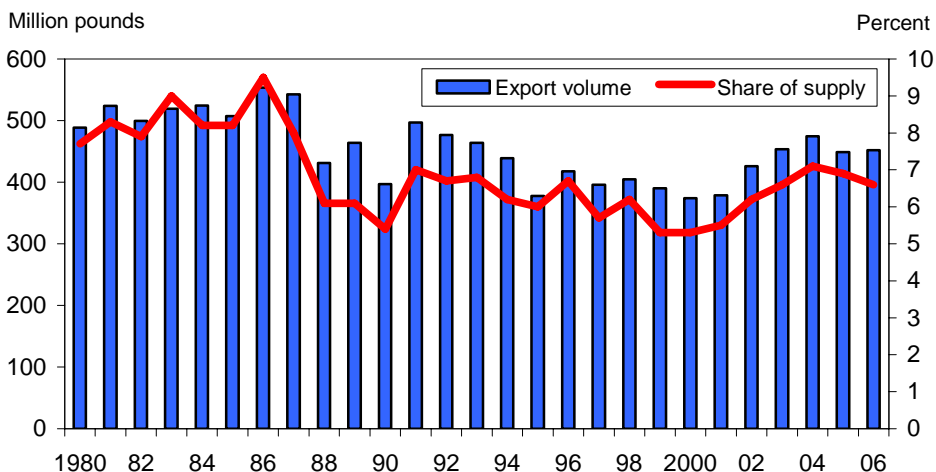
For processed lettuce, processing may range from field washed, cored, and wrapped head lettuce to a mixed fresh-cut and bagged salad kit prepared in a processing plant. Today, almost all head lettuce is field-packed for bulk sale or for transport to a salad processing plant. Estimates suggest that about one-fourth of all iceberg lettuce is now destined for processing into prepackaged salads.

Trade is Important

The export market is very important for lettuce of all types. Lettuce is one of the most important vegetable crops exported from the United States. During 2003-05, the value of all lettuce exports was \$287 million, of which 40 percent consisted of head lettuce. A decade earlier, the shares were reversed, with head lettuce accounting for 60 percent of all lettuce exports.

Between 1993-95 and 2003-05, the volume of head lettuce exports increased 8 percent to 460 million pounds. Canada remains the top export market with 74 percent of volume, followed by Mexico (16 percent) and Taiwan (3 percent). In 1993-95, Hong Kong was the second leading foreign market but has since fallen to fifth as supplies from China replace imports from the United States. The United States once supplied more than 90 percent of Hong Kong's head lettuce imports, but that share has been reduced to less than one-third of the market and is trending lower as Hong Kong's economy continues to integrate with China's.

Figure 14

U.S. head lettuce: Export volume and export share of supply

Source: Prepared by ERS based on trade data from Bureau of the Census, USDC.

The United States exported 7 percent of its head lettuce supply during 2003-05 compared with 6 percent in 1993-95 (fig. 14). During 2003-05, monthly export volume ranged from 7 to 10 percent of total annual head lettuce exports. Export volume is generally lowest during the summer months since Canada's farms are in production, reducing that country's import demand. Volume is greatest in the spring when demand from Canada and Taiwan peak.

U.S. head lettuce imports averaged 102 million pounds (\$23 million) in 2003-05, with most of the volume arriving from Mexico (77 percent of the total during 2003-05) and Canada (22 percent). Although still playing a minor role in the U.S. head lettuce market, the role of imports appears to be changing. Until 2002, the share of head lettuce consumption satisfied by imports had remained well below 1 percent. However, imports have remained between 1 and 2 percent of consumption since 2002 when cold weather reduced domestic production. Head lettuce imports now enter the country year round on a consistent basis, compared with a decade earlier when about two-thirds of imports entered during the summer (coinciding with Canada's peak production). Import volume from Mexico increased 269 percent between 1993-95 and 2003-05 as some U.S. shippers have diversified their sources and now import head lettuce during every month of the year. This diversification may be a reaction to several weather-related supply disruptions over the past several years and the increased needs of lettuce shippers to assure steady supplies to contract buyers such as salad processors.

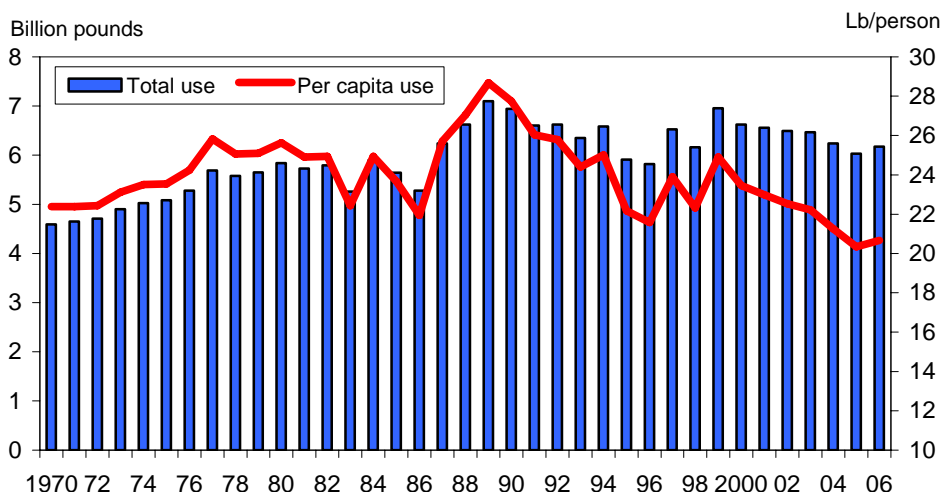
Lettuce Still Popular, But Iceberg's Share is Slipping

Americans consumed 6.2 billion pounds of head lettuce during 2003-05. At 21.3 pounds per capita (average per person), head lettuce is second only to potatoes (45 pounds) as the largest single fresh market vegetable consumed in the United States. However, per capita use of head lettuce has declined 29 percent since reaching its 1989 record-high (28.7 pounds per person) and is now closer to the levels recorded during the 1960s.

Although head lettuce consumption has softened, this does not mean that total lettuce demand has declined. On the contrary, lettuce has never been more popular among U.S. consumers, as per capita use reached an all-time high in 2003 of 33.3 pounds and is expected to remain near that level in 2006. The slack in the iceberg market has been more than compensated for by increased use of romaine and leaf lettuces. Total domestic use of leaf and romaine lettuce has more than doubled over the past decade to nearly 3.5 billion pounds in 2005. This has pushed total lettuce consumption up 11 percent during the past decade.

Figure 15

U.S. head lettuce: Domestic use, total and per capita



Source: Estimated by the Economic Research Service, USDA.

Table 17--U.S. head lettuce: Estimated supply, disappearance, and price

Year	Supply			Utilization			Season-ave. price	
	Production 1/	Imports 2/	Total	Exports 2/	Domestic 3/	Per capita use	Current dollars 1/	Constant dollars 4/
	-- Million pounds --					Pounds	-- \$/cwt --	
1985	6,133.4	37.8	6,171.2	507.4	5,663.8	23.67	10.80	15.49
1990	7,320.1	17.2	7,337.3	396.9	6,940.4	27.75	11.50	14.09
2000	6,967.3	31.9	6,999.2	374.2	6,625.0	23.46	17.30	17.30
2001	6,891.7	45.8	6,937.5	378.8	6,558.7	22.99	17.90	17.48
2002	6,814.0	106.6	6,920.6	425.9	6,494.7	22.54	21.10	20.25
2003	6,824.8	94.1	6,918.9	453.6	6,465.3	22.22	18.10	17.03
2004	6,622.8	92.1	6,714.9	474.6	6,240.3	21.25	16.90	15.49
2005	6,359.4	119.0	6,478.4	448.7	6,029.7	20.34	15.60	13.91
2006 f	6,500.0	125.0	6,625.0	451.8	6,173.2	20.65	--	--

-- = Not available. f = ERS forecast. 1/ Source: NASS, USDA. 2/ Source: Bureau of the Census, USDC. 3/ Domestic disappearance for all uses, including shrink and loss. 4/ Constant dollar prices calculated using the GDP deflator, 2000=100.

Source: Economic Research Service, USDA.

For more information on lettuce, refer to the following links:

<http://usda.mannlib.cornell.edu/data-sets/crops/lettuce/>

<http://usda.mannlib.cornell.edu/data-sets/specialty/89011/>